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PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE 2002 INTEGRATED RESOURCE PLAN OF	)	
BIG RIVERS ELECTRIC CORPORATION	)	**CASE NO. 2002-00428**

KENTUCKY DIVISION OF ENERGY'S COMMENTS ON THE 2002 INTEGRATED RESOURCE PLAN OF BIG RIVERS ELECTRIC CORPORATION

Comes the Kentucky Natural Resources and Environmental Protection Cabinet, Division of Energy (hereinafter "KDOE"), Intervenor herein, and makes the following comments on the 2002 Integrated Resource Plan (IRP) of Big Rivers Electric Corporation ("Big Rivers"), which was prepared by GDS Associates, Inc. (GDS).

Under a range of assumptions about future load growth, Big Rivers anticipates that it will be able to meet all of its demand and energy requirements during the period from 2003 through 2017 through its existing contracts with SEPA and LG&E Energy Marketing, Inc. (LEM). Because these contracts are firm, and because the LEM contract includes liquidated damages for non-delivery, Big Rivers does not plan for a reserve margin as generating utilities do. IRP, Executive Summary, p. ES-1. Based on an analysis of a range of supply-side technologies, GDS and Big Rivers conclude that the costs of investing in new resources "would exceed the cost of power purchased from LEM" during the planning period. IRP, p. ES-2.

The IRP mentions that Big Rivers is following the progress of the net metering pilot project underway at LG&E and Kentucky Utilities. IRP, p. 27. KDOE shares the concern voiced by the representative of the Attorney General's Office at the PSC informal conference held on May 13, 2003, to the effect that in the absence of publicity for the net metering pilot tariff, the number of participants is likely to be very small. Big Rivers should not delay the development of a net metering program of its own while waiting to obtain information from the LG&E/KU pilot program. KDOE has model net metering provisions based on information from several states that it would be happy to share with Big Rivers.

GDS also performed an analysis of demand-side management (DSM) options, which updated and replaced the DSM study completed in 1995. This study was performed partly in response to the PSC Staff's recommendation made in its Report on Big Rivers' 1999 IRP, p. 13. KDOE would have appreciated the opportunity to have had substantive input into the development of this DSM study, but due to a misunderstanding, Big Rivers did not facilitate such involvement.

GDS calculated benefit/cost ratios for 25 residential and 45 commercial energy efficiency measures. Many of these measures, however, were minor variations on the same technology. For example, nine of the residential measures were various sizes of compact fluorescent lights (CFLs) operating for a different number of hours per day. Nine of the commercial measures were various sizes of CFLs, and 18 measures were various sizes of motors. 2002 DSM Study, pp. 91-93. One would never design a separate DSM program to address only 20-horsepower motors or 25-Watt CFLs operating 6 hours per day. When such duplication is eliminated, the actual number of DSM programs analyzed quantitatively is relatively small.

In analyzing DSM measures, GDS used a value of zero for the avoided cost of capacity. This number was provided by Big Rivers. PSC informal conference, May 13, 2003. It is incorrect to use a value of zero because that implies that having additional capacity would be worth nothing at all to the utility. KDOE data requests Nos. 9a and 20. This is contrary to fact, however, because if Big Rivers were to have additional capacity available, it would have the opportunity to sell the excess for a profit in the wholesale market. Informal conference, May 13, 2003. In future analyses, Big Rivers and its consultants should use an appropriate non-zero value for the avoided cost of capacity that reflects its expected contribution to net income. The use of a reasonable value for avoided capacity cost could have a significant effect on the quantitative analysis of DSM options.

In its comments on Big Rivers' 1999 IRP, KDOE criticized the 1995 DSM study because the listed measures focused on individual technologies and neglected the potentially larger efficiency gains that can be achieved when new buildings and manufacturing processes are analyzed from a systems perspective. KDOE made the following statement about the list of DSM measures considered in the 1995 study:

> "The list is dominated by residential retrofit programs. New residential construction does not appear, nor do commercial new construction, commercial daylighting, combined heat and power (C/I), industrial motor and drive systems, or industrial process improvements, all of which have been found to offer very large potential efficiency gains in other areas of the country (including the Pacific Northwest, which has electricity rates as low as Kentucky's)."

KDOE's Comments on the 1999 IRP of Big Rivers, p. 14.

This criticism still applies, to a lesser degree, to the 2002 DSM Study by GDS. Energy-efficient new homes were not analyzed, although the proposed three-year energy efficiency action plan includes the development of "a brochure for members who are considering building a new home to explain energy efficient equipment and building practices that should be considered during the construction process." IRP, p. ES-5. The commissioning of new and existing commercial buildings was analyzed, but not a program to improve the energy efficiency of new commercial building design and construction practices. DSM Study, pp. 65-67. Commercial daylighting was not analyzed from a systems perspective, although the discrete technology of commercial daylight dimming controls was assessed. DSM Study, p.63. Combined heat and power (CHP) was not analyzed as such, unless the single 1-MW unit at Weyerhauser discussed on Page 10 of the IRP is a CHP installation. Although GDS analyzed premium-efficiency motors and adjustable speed drives, they did not assess motor-driven systems such as pumping systems and compressed air systems, which have been found to be fruitful areas for energy savings. The only mention of industrial processes was the recommendation for Big Rivers to "examine the feasibility of seeking funding from the US EPA to promote demonstration projects for new, energy efficient technologies in the industrial sector." This was part of the Three-Year Energy Efficiency Action Plan, but the program does not appear to have been analyzed quantitatively. DSM Study, p.6.

If Big Rivers is interested in designing effective motor-related DSM programs, KDOE recommends the book, *Energy-Efficient Motor Systems: A Handbook on Technology, Program, and Policy Opportunities,* 2nd edition, Steven Nadel et al., American Council for an Energy-Efficient Economy, 2002, particularly Chapter 9, "Programs to Promote Motor System Efficiency Improvements." More generally, it also recommends a new report published by the same organization titled, *America's Best: Profiles of America's Leading Energy Efficiency Programs,* by Dan York and Martin Kushler, March 2003. This report describes a number of exemplary programs in enough detail to provide sound ideas and data that can be used when designing new DSM programs for all customer classes. The names, telephone numbers, and e-mail addresses of program managers are also provided for those seeking further information.

As we stated at the informal conference, KDOE is not recommending that Big Rivers implement DSM programs for the sole or primary purpose of becoming an energy marketing company or freeing up capacity to be sold for a profit in the market. Rather it is recommending that Big Rivers implement cost-effective new DSM programs whose primary purpose would be to help Big Rivers' ultimate customers reduce their energy bills. Any impact on the utility's off-system sales would be a side effect. KDOE is surprised and disappointed that a cooperative such as Big Rivers has not evinced more interest to date in seriously exploring this strategy to improve the economic well-being of its ultimate customers.

VERIFICATION

I, Geoffrey M. Young, state that I have written the above document and that to the best of my knowledge and belief all statements and allegations contained therein are true and correct.

Geoffrey M. Young
Geoffrey M. Young, Assistant Director
Department for Natural Resources
Division of Energy

Subscribed and sworn to before me by Geoffrey M. Young, this the 6th day of June, 2003.

Donald Atwood Hamm, Jr.
NOTARY PUBLIC

My Commission Expires: 03/31/2005

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the 6th day of June, 2003, a true and accurate copy of the foregoing pleading was mailed, postage pre-paid, to the following:

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